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(54) OPAL-LIKE DEFFRACTIVE COLOR DEVELOPING FILM

(57) Abstract:

PURPOSE: To obtain an opal-like color diffractive color developing film having high luminance without dead angles by providing this film with a single-layer particulate film of the close-packed hexagonal lattice consisting of micron order particulates.

CONSTITUTION: This single-layer particulate film of the close-packed hexagonal lattice has the particulates of color development wavelength order. The diameter of the particulates is preferably 0.1 to 10 μ m. The diffractive color development film is produced by a method of forming a single particle film by the advection and integration of the particulates on a solid substrate.

This method is executed by immersing the solid substrate into an aq. suspension liquid contg. the particulates of the high polymer, ceramics, etc., and pulling up the substrate under a precisely controlled condition to form the single particle film of the particulates on the substrate. The fact that the particulates are intrinsically low in adsorbability on the substrate is positively utilized at the time of forming this single particle film and, therefore, easy mechanical lithography to the required patterns is made possible. The fixing of the single particle film is easy and the immobilization by means, such as irradiation with energy rays including electron rays, etc., or heating, etc., is possible according to the nature of the particulates.

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